

13-Spindle Line Boring Machine

(Model 32-325)

INSTRUCTION MANUAL



Shown with
Accessory 32-331
Stand

PART NO. 449-01-651-0005 - 06-20-05
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IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING Read and understand all warnings and operating instructions before using any tool or equipment. When using tools or equipment, basic safety precautions should always be followed to reduce the risk of personal injury. Improper operation, maintenance or modification of tools or equipment could result in serious injury and property damage. There are certain applications for which tools and equipment are designed. Delta Machinery strongly recommends that this product NOT be modified and/or used for any application other than for which it was designed.

If you have any questions relative to its application DO NOT use the product until you have written Delta Machinery and we have advised you.

Online contact form at www.deltamachinery.com

Postal Mail: Technical Service Manager
Delta Machinery
4825 Highway 45 North
Jackson, TN 38305
(IN CANADA: 125 Mural St. Suite 300, Richmond Hill, ON, L4B 1M4)

Information regarding the safe and proper operation of this tool is available from the following sources:

Power Tool Institute
1300 Sumner Avenue, Cleveland, OH 44115-2851
www.powertoolinstitute.org

National Safety Council
1121 Spring Lake Drive, Itasca, IL 60143-3201

American National Standards Institute, 25 West 43rd Street, 4 floor, New York, NY 10036 www.ansi.org
ANSI 01.1 Safety Requirements for Woodworking Machines, and

the U.S. Department of Labor regulations www.osha.gov

SAVE THESE INSTRUCTIONS!

SAFETY GUIDELINES - DEFINITIONS

It is important for you to read and understand this manual. The information it contains relates to protecting YOUR SAFETY and PREVENTING PROBLEMS. The symbols below are used to help you recognize this information.

⚠ DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
CAUTION	Used without the safety alert symbol indicates potentially hazardous situation which, if not avoided, may result in property damage.

CALIFORNIA PROPOSITION 65

⚠ WARNING **SOME DUST CREATED BY POWER SANDING, SAWING, GRINDING, DRILLING, AND OTHER CONSTRUCTION ACTIVITIES** contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, always wear **NIOSH/OSHA** approved, properly fitting face mask or respirator when using such tools.

GENERAL SAFETY RULES



⚠ WARNING READ AND UNDERSTAND ALL WARNINGS AND OPERATING INSTRUCTIONS BEFORE USING THIS EQUIPMENT. Failure to follow all instructions listed below, may result in electric shock, fire, and/or serious personal injury or property damage.

IMPORTANT SAFETY INSTRUCTIONS

1. **FOR YOUR OWN SAFETY, READ THE INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.** Learning the machine's application, limitations, and specific hazards will greatly minimize the possibility of accidents and injury.
2. **WEAR EYE AND HEARING PROTECTION. ALWAYS USE SAFETY GLASSES.** Everyday eyeglasses are NOT safety glasses. USE CERTIFIED SAFETY EQUIPMENT. Eye protection equipment should comply with ANSI Z87.1 standards. Hearing equipment should comply with ANSI S3.19 standards.
3. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
4. **DO NOT USE THE MACHINE IN A DANGEROUS ENVIRONMENT.** The use of power tools in damp or wet locations or in rain can cause shock or electrocution. Keep your work area well-lit to prevent tripping or placing arms, hands, and fingers in danger.
5. **MAINTAIN ALL TOOLS AND MACHINES IN PEAK CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories. Poorly maintained tools and machines can further damage the tool or machine and/or cause injury.
6. **CHECK FOR DAMAGED PARTS.** Before using the machine, check for any damaged parts. Check for alignment of moving parts, binding of moving parts, breakage of parts, and any other conditions that may affect its operation. A guard or any other part that is damaged **should be properly repaired or replaced.** Damaged parts can cause further damage to the machine and/or injury.
7. **KEEP THE WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
8. **KEEP CHILDREN AND VISITORS AWAY.** Your shop is a potentially dangerous environment. Children and visitors can be injured.
9. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure that the switch is in the "OFF" position before plugging in the power cord. In the event of a power failure, move the switch to the "OFF" position. An accidental start-up can cause injury.
10. **USE THE GUARDS.** Check to see that all guards are in place, secured, and working correctly to reduce the risk of injury.
11. **REMOVE ADJUSTING KEYS AND WRENCHES BEFORE STARTING THE MACHINE.** Tools, scrap pieces, and other debris can be thrown at high speed, causing injury.
12. **USE THE RIGHT MACHINE.** Don't force a machine or an attachment to do a job for which it was not designed. Damage to the machine and/or injury may result.
13. **USE RECOMMENDED ACCESSORIES.** The use of accessories and attachments not recommended by Delta may cause damage to the machine or injury to the user.
14. **USE THE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage, resulting in loss of power and overheating. See the Extension Cord Chart for the correct size depending on the cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.
15. **SECURE THE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. Loss of control of a workpiece can cause injury.
16. **FEED THE WORKPIECE AGAINST THE DIRECTION OF THE ROTATION OF THE BLADE, CUTTER, OR ABRASIVE SURFACE.** Feeding it from the other direction will cause the workpiece to be thrown out at high speed.
17. **DON'T FORCE THE WORKPIECE ON THE MACHINE.** Damage to the machine and/or injury may result.
18. **DON'T OVERREACH.** Loss of balance can make you fall into a working machine, causing injury.
19. **NEVER STAND ON THE MACHINE.** Injury could occur if the tool tips, or if you accidentally contact the cutting tool.
20. **NEVER LEAVE THE MACHINE RUNNING UNATTENDED. TURN THE POWER OFF.** Don't leave the machine until it comes to a complete stop. A child or visitor could be injured.
21. **TURN THE MACHINE "OFF", AND DISCONNECT THE MACHINE FROM THE POWER SOURCE** before installing or removing accessories, before adjusting or changing set-ups, or when making repairs. An accidental start-up can cause injury.
22. **MAKE YOUR WORKSHOP CHILDPROOF WITH PADLOCKS, MASTER SWITCHES, OR BY REMOVING STARTER KEYS.** The accidental start-up of a machine by a child or visitor could cause injury.
23. **STAY ALERT, WATCH WHAT YOU ARE DOING, AND USE COMMON SENSE. DO NOT USE THE MACHINE WHEN YOU ARE TIRED OR UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR MEDICATION.** A moment of inattention while operating power tools may result in injury.
24. **⚠ WARNING** USE OF THIS TOOL CAN GENERATE AND DISBURSE DUST OR OTHER AIRBORNE PARTICLES, INCLUDING WOOD DUST, CRYSTALLINE SILICA DUST AND ASBESTOS DUST. Direct particles away from face and body. Always operate tool in well ventilated area and provide for proper dust removal. Use dust collection system wherever possible. Exposure to the dust may cause serious and permanent respiratory or other injury, including silicosis (a serious lung disease), cancer, and death. Avoid breathing the dust, and avoid prolonged contact with dust. Allowing dust to get into your mouth or eyes, or lay on your skin may promote absorption of harmful material. Always use properly fitting NIOSH/OSHA approved respiratory protection appropriate for the dust exposure, and wash exposed areas with soap and water.

ADDITIONAL SPECIFIC SAFETY RULES

⚠ WARNING

FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY.

1. **DO NOT OPERATE THIS MACHINE** until it is completely assembled and installed according to the instructions. A machine incorrectly assembled can cause serious injury.
2. **OBTAIN ADVICE** from your supervisor, instructor, or another qualified person if you are not thoroughly familiar with the operation of this machine. Knowledge is safety.
3. **FOLLOW ALL WIRING CODES** and recommended electrical connections to prevent shock or electrocution.
4. **SECURE THE MACHINE TO A SUPPORTING SURFACE.** Vibration can cause the machine to slide, walk, or tip over.
5. **NEVER START THE MACHINE BEFORE CLEARING THE TABLE OF ALL OBJECTS** (tools, scrap pieces, etc.). Debris can be thrown at high speed.
6. **NEVER START THE MACHINE** with the drill bits against the workpiece. Loss of control of the workpiece can cause serious injury.
7. **PROPERLY LOCK THE DRILL BITS IN THE CHUCK** before operating this machine.
8. **USE ONLY DRILL BITS**, with shank size recommended in your instruction manual. The wrong size accessory can cause damage to the machine and/or serious injury.
9. **USE ONLY DRILL BITS** that are not damaged. Damaged items can cause malfunctions that lead to injuries.
10. **AVOID AWKWARD OPERATIONS AND HAND POSITIONS.** A sudden slip could cause a hand to move into the bit.
11. **KEEP ARMS, HANDS, AND FINGERS** away from the bit. Serious injury to the hand can occur.
12. **TURN THE MACHINE “OFF” AND WAIT FOR THE DRILL BITS TO STOP TURNING** prior to cleaning the work area, removing debris, removing or securing work-piece, or changing the angle of the table. A moving drill bit, cutting tool, or sanding drum can cause serious injury.
13. **PROPERLY SUPPORT LONG OR WIDE** work-pieces. Loss of control of the workpiece can cause severe injury.
14. **NEVER PERFORM LAYOUT, ASSEMBLY OR SET-UP WORK** on the table/work area when the machine is running. Serious injury can result.
15. **TURN THE MACHINE “OFF”**, disconnect the machine from the power source, and clean the table/work area before leaving the machine. **LOCK THE SWITCH IN THE “OFF” POSITION** to prevent unauthorized use. Someone else might accidentally start the machine and cause serious injury to themselves.
16. **ADDITIONAL INFORMATION** regarding the safe and proper operation of power tools (i.e. a safety video) is available from the Power Tool Institute, 1300 Sumner Avenue, Cleveland, OH 44115-2851 (www.powertoolinstitute.com). Information is also available from the National Safety Council, 1121 Spring Lake Drive, Itasca, IL 60143-3201. Please refer to the American National Standards Institute ANSI 01.1 Safety Requirements for Woodworking Machines and the U.S. Department of Labor OSHA 1910.213 Regulations.

SAVE THESE INSTRUCTIONS.

Refer to them often and use them to instruct others.

POWER CONNECTIONS

A separate electrical circuit should be used for your machines. This circuit should not be less than #12 wire and should be protected with a 20 Amp time lag fuse. If an extension cord is used, use only 3-wire extension cords which have 3-prong grounding type plugs and matching receptacle which will accept the machine's plug. Before connecting the machine to the power line, make sure the switch (s) is in the "OFF" position and be sure that the electric current is of the same characteristics as indicated on the machine. All line connections should make good contact. Running on low voltage will damage the machine.

⚠ DANGER DO NOT EXPOSE THE MACHINE TO RAIN OR OPERATE THE MACHINE IN DAMP LOCATIONS.

MOTOR SPECIFICATIONS

Your machine is wired for 120 VOLT, 60 HZ alternating current. Before connecting the machine to the power source, make sure the switch is in the "OFF" position.

GROUNDING INSTRUCTIONS

⚠ DANGER THIS MACHINE MUST BE GROUNDED WHILE IN USE TO PROTECT THE OPERATOR FROM ELECTRIC SHOCK.

1. All grounded, cord-connected machines:

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This machine is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the machine is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding type plugs and matching 3-conductor receptacles that accept the machine's plug, as shown in Fig. A.

Repair or replace damaged or worn cord immediately.

2. Grounded, cord-connected machines intended for use on a supply circuit having a nominal rating less than 150 volts:

If the machine is intended for use on a circuit that has an outlet that looks like the one illustrated in Fig. A, the machine will have a grounding plug that looks like the plug illustrated in Fig. A. A temporary adapter, which looks like the adapter illustrated in Fig. B, may be used to connect this plug to a matching 2-conductor receptacle as shown in Fig. B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box. Whenever the adapter is used, it must be held in place with a metal screw.

NOTE: In Canada, the use of a temporary adapter is not permitted by the Canadian Electric Code.

⚠ DANGER IN ALL CASES, MAKE CERTAIN THAT THE RECEPTACLE IN QUESTION IS PROPERLY GROUNDED. IF YOU ARE NOT SURE, HAVE A QUALIFIED ELECTRICIAN CHECK THE RECEPTACLE.

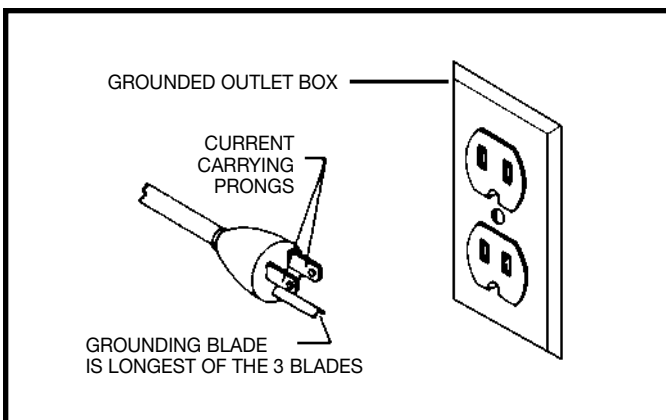


Fig. A

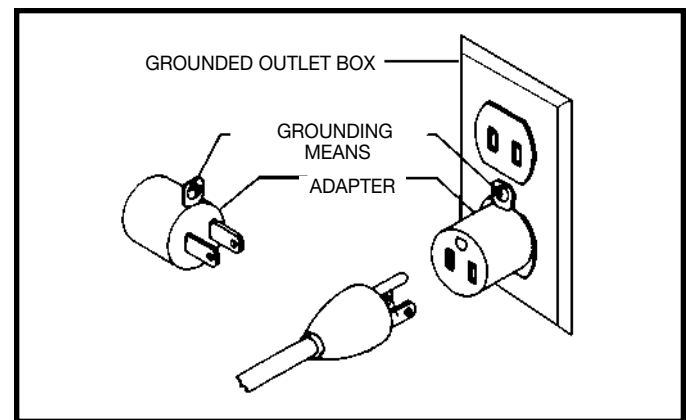


Fig. B

EXTENSION CORDS

⚠ WARNING Use proper extension cords. Make sure your extension cord is in good condition and is a 3-wire extension cord which has a 3-prong grounding type plug and matching receptacle which will accept the machine's plug. When using an extension cord, be sure to use one heavy enough to carry the current of the machine. An undersized cord will cause a drop in line voltage, resulting in loss of power and overheating. Fig. D-1 shows the correct gauge to use depending on the cord length. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

MINIMUM GAUGE EXTENSION CORD			
RECOMMENDED SIZES FOR USE WITH STATIONARY ELECTRIC MACHINES			
Ampere Rating	Volts	Total Length of Cord in Feet	Gauge of Extension Cord
0-6	120	up to 25	18 AWG
0-6	120	25-50	16 AWG
0-6	120	50-100	16 AWG
0-6	120	100-150	14 AWG
6-10	120	up to 25	18 AWG
6-10	120	25-50	16 AWG
6-10	120	50-100	14 AWG
6-10	120	100-150	12 AWG
10-12	120	up to 25	16 AWG
10-12	120	25-50	16 AWG
10-12	120	50-100	14 AWG
10-12	120	100-150	12 AWG
12-16	120	up to 25	14 AWG
12-16	120	25-50	12 AWG
12-16	120	GREATER THAN 50 FEET NOT RECOMMENDED	

Fig. D-1

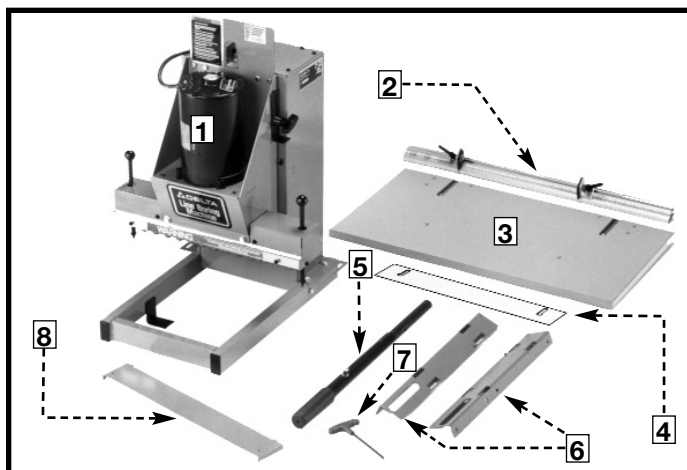
FUNCTIONAL DESCRIPTION

FOREWORD

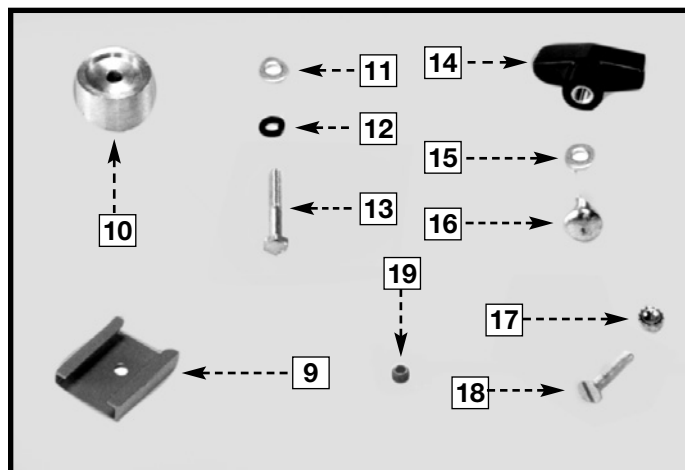
The Delta Model 32-325 line boring machine comes with a large 16" x 29-3/4" table that provides a work space for boring large boards.

NOTICE: The photo on the manual cover illustrates the current production model. All other illustrations contained in the manual are representative only and may not depict the actual color, labeling, or accessories, and are intended to illustrate technique only.

CARTON CONTENTS



- 1 - Boring Machine
- 2 - Fence
- 3 - Table
- 4 - Clear Plastic Guard
- 5 - Operating Handle
- 6 - Table Brackets
- 7 - Wrench
- 8 - Gauge for Aligning Fence to Drill Head



- 9 - Table Bracket Slides (4)
- 10 - Spacers (2)
- 11 - 1/4" Flat Washers (2)
- 12 - 1/4" Lockwashers (2)
- 13 - 1/4-20 x 1-1/2" Hex Screws (2)
- 14 - Table Lock Knobs (2)
- 15 - 5/16" Flat Washers (2)
- 16 - 5/16-18 x 3/4" Carriage Bolts (2)
- 17 - 1/4-20 Hex Lock Nuts (4)
- 18 - 1/4-20 x 1-1/4" Flat Head Screws (4)
- 19 - 5/16-24x1/4" Hex Set Screws (13)

ASSEMBLY

ASSEMBLY TOOLS REQUIRED

5/16" wrench (not supplied)

1/4" wrench (not supplied)

ASSEMBLY TIME ESTIMATE

Approximately two hours.

ASSEMBLING THE ACCESSORY 32-331 STAND

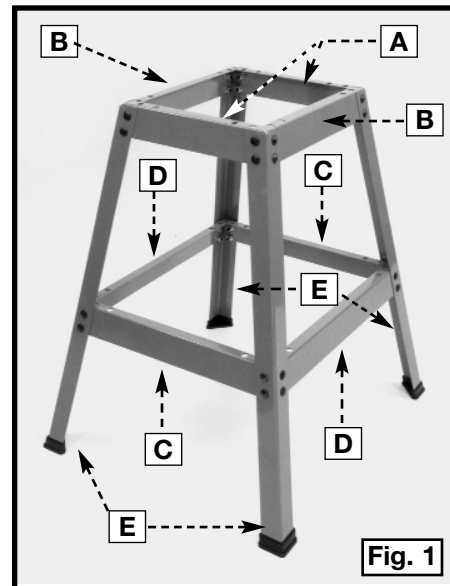
If you purchased the accessory 32-331 steel stand for use with your boring machine, use Fig. 1 as your guide. Align the holes in the legs with the holes in the braces, insert a 5/16-18 x 5/8" carriage bolt through a hole in the leg and the corresponding hole in the brace. Place a 5/16" flat washer on the carriage bolt and thread and hand-tighten a 5/16-18 hex nut on the carriage bolt. Repeat this process for the thirty-one remaining holes.

NOTE: Mount all braces to the inside of the legs.

NOTE: The two top front and rear braces (A) are 13-1/2" long. The two top side braces (B) are 16-1/2" long. The two bottom front and rear braces (C) are 19-1/2" long, and the two bottom side braces (D) are 22-1/2" long. The four legs (E) are 31-1/2" long.

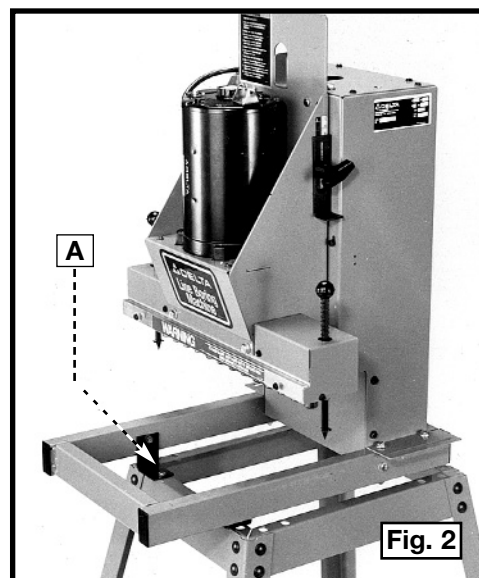
NOTE: Hand-tighten the stand mounting hardware until you attach the machine to the stand.

Attach the four plastic feet to the bottom of each leg.



ATTACHING THE MACHINE TO THE STAND

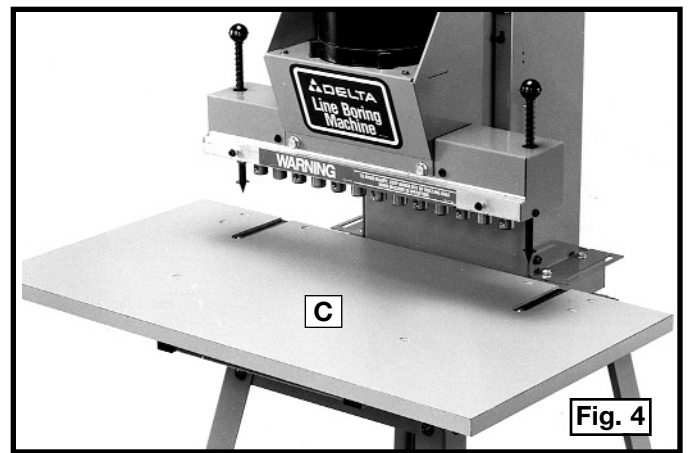
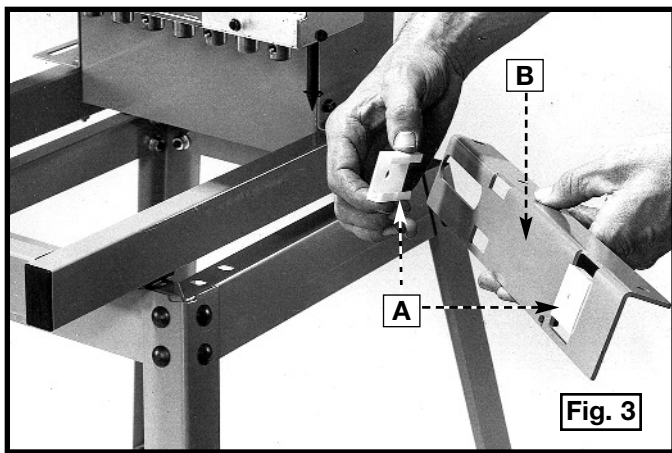
Place the machine on the stand, using Fig. 2 as a guide. Align the four holes of the machine with the four holes on the stand. Insert the 3/4" hex head screw through the top of the machine and stand. Place a 5/16" flat washer on the 3/4" hex head screw (A) Fig. 2, followed by a 5/16" Lockwasher. Thread a 5/16-18 nut on the hex head screw and tighten securely. Repeat this process for the three remaining holes.



ATTACHING THE MACHINE TO A SUPPORTING SURFACE

⚠ WARNING

If you use the boring machine without the accessory stand, fasten the machine to a stable supporting surface using suitable hardware (not supplied).



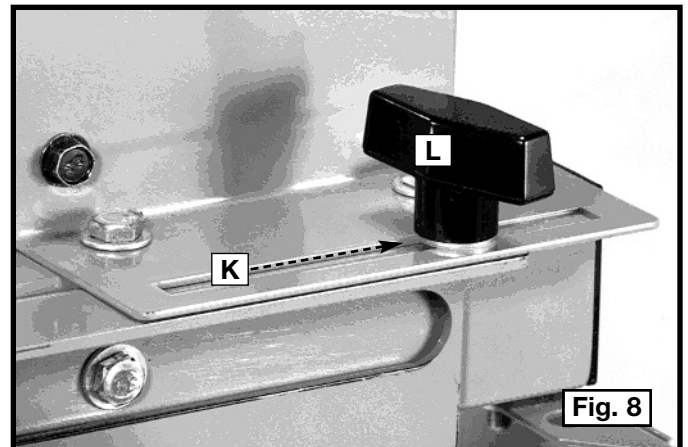
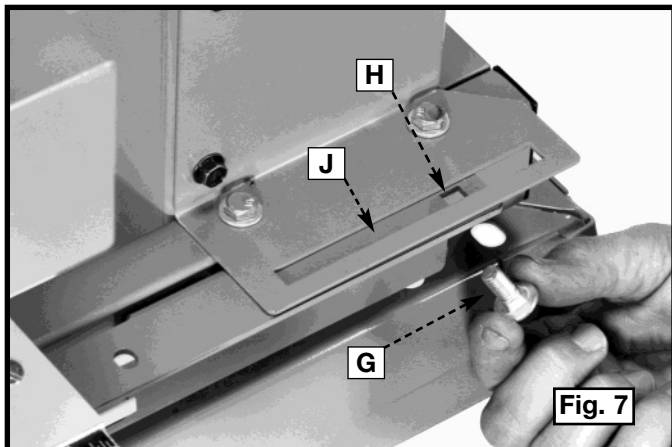
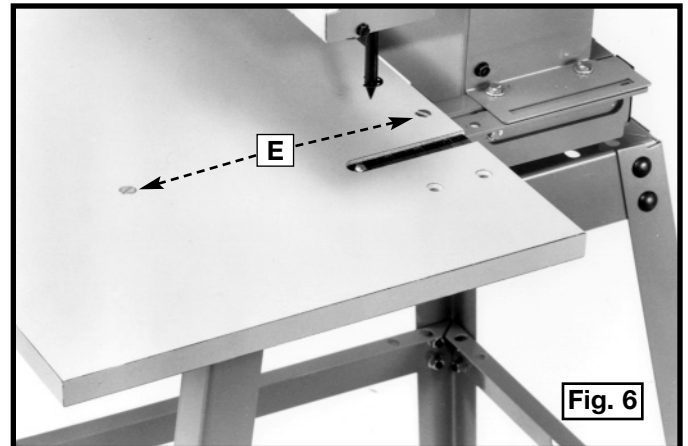
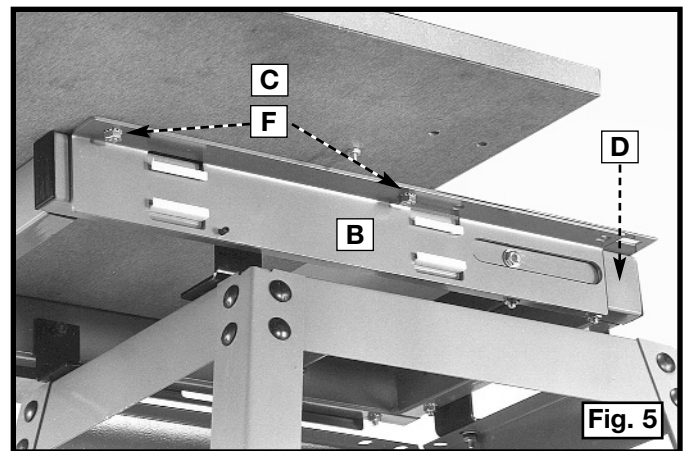
ATTACHING THE TABLE TO THE MACHINE

1. Clip the two table slides (A) Fig. 3 in the table bracket (B).
2. Clip the remaining two table slides in the other table bracket.
3. Center the table (C) Fig. 4 on the machine frame.
4. Position the table bracket (B) Fig. 5 against the machine frame (D) and underneath the table (C). Align the two holes (E) Fig. 6 in the table with the two holes (F) Fig. 5 on top of table bracket (B) Fig. 5.
5. Fasten the table to the table bracket using the two 1/4-20 x 1-1/4" flat head screws (E) Fig. 6, and two 1/4-20 lock nuts (F) Fig. 5.

NOTE: Loosely tighten the hardware for further adjustment.

6. Attach the remaining table bracket to the other side of the table and frame in the same manner.
7. Insert the 5/16-18 x 3/4" carriage bolt (G) Fig. 7, up through square hole (H) and slot (J). Secure the carriage bolt using the 5/16" flat washer (K) Fig. 8 and lock knob (L).

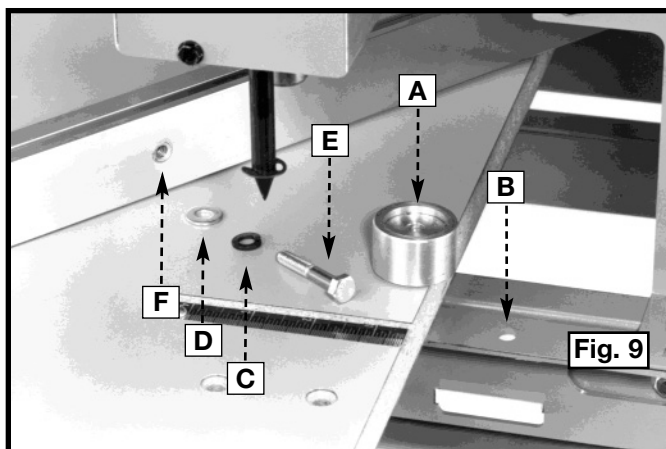
NOTE: Loosely tighten the hardware for further adjustment.



ATTACHING THE FENCE TO THE MACHINE

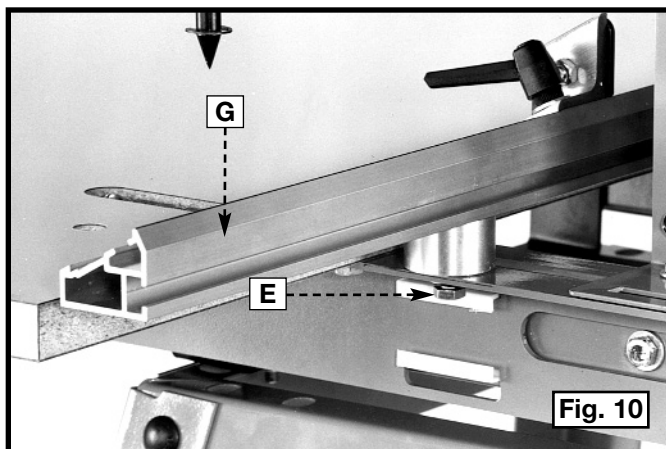
1. Place the spacer (A) Fig. 9 over the hole (B) in the table bracket with the large countersunk end of the spacer (A) in the "up" position.
2. Place a 1/4" lockwasher (C) Fig. 9 and a 1/4" flat washer (D) on the 1/4-20 x 1-1/2" hex head screw (E). Insert the screw (E) up through the hole (B) in the table bracket and through the hole in the spacer (A). Thread the screw (E) into the threaded hole (F) on the bottom of the fence.

NOTE: Loosely tighten the hardware for further adjustment.



3. Attach the remaining spacer to the opposite end of fence in the same manner.
4. The fence (G), attached to the table bracket, is shown in Fig. 10.

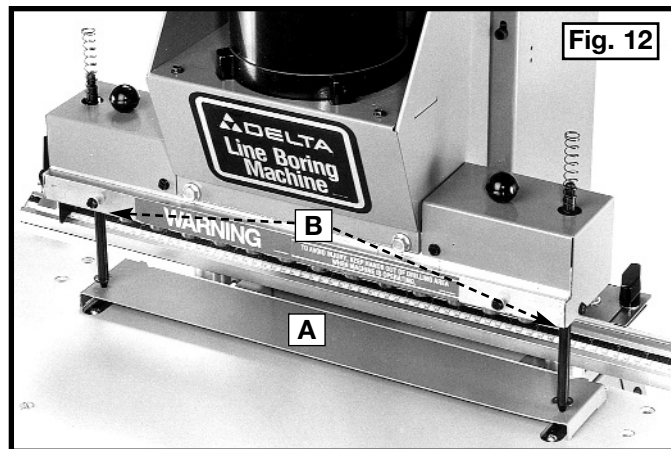
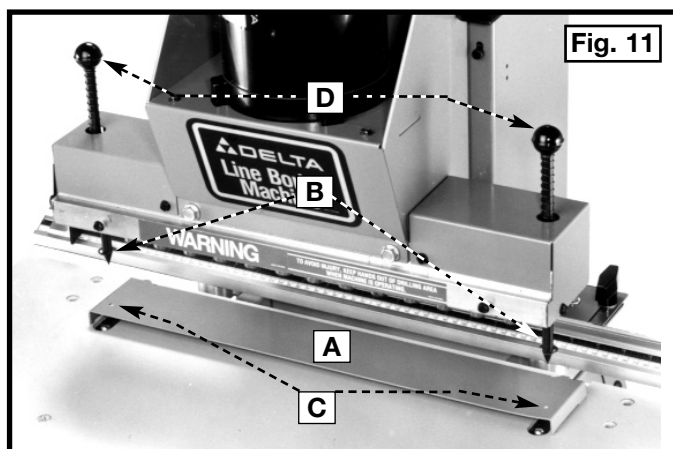
NOTE: Loosely tighten the two screws, one of which is shown at (E) for further adjustment.

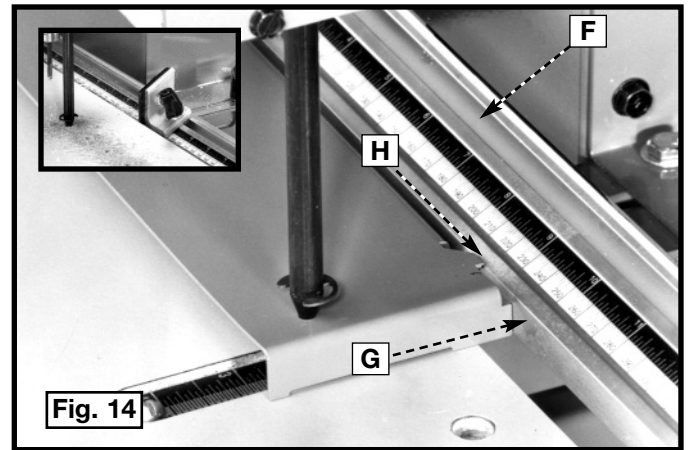
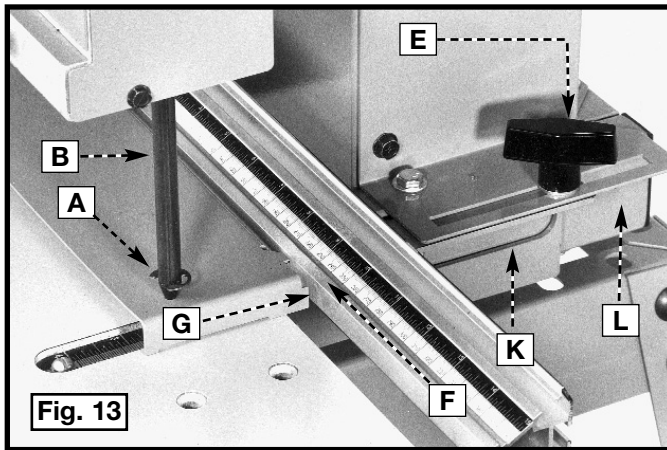


ALIGNING THE FENCE PARALLEL TO THE LINE BORING HEAD

NOTE: Refer to "SETTING THE FENCE STOPS" in the "OPERATION" section of this manual.

1. Set the right fence stop to 9 inches on the fence scale. Move the left fence stop beyond the 9" mark. Position the gauge (A) Fig. 11 on the table with the points of both of the indexing pins (B) over the holes (C) in the gauge.
2. Unscrew and remove the knobs (D) Fig. 11 from the top of the indexing pins.
3. Lower the indexing pins (B) Fig. 12 until the points of the indexing pins engage the two holes in the gauge (A).





4. With the index pins (B) Fig. 13 engaged in the gauge holes (A), loosen the table lock knobs, one of which is shown at (E). Move the table until the front of the fence (F) is approximately 1/32" away from the gauge at point (G) on each end of the gauge. Tighten the table lock knobs (E).
5. Use a small "C" clamp (not supplied) to secure the table bracket (K) Fig. 18 to the machine frame (L) at a point between the two slides to avoid movement. Clamp the table bracket on the other side of the machine to the machine frame in the same manner.
6. Loosen the two screws (E) Fig. 10 that fasten the fence (F) Fig. 14 to the machine. Move the fence (F) until the front surface of the fence contacts the gauge at point (G) on each end of the gauge. Move the fence left or right until the right fence stop (set in **STEP 1** - see inset - Fig. 14) contacts the gauge at point (H) Fig. 14. Tighten the fence mounting hardware.

NOTE: The fence stop was removed for clarity.

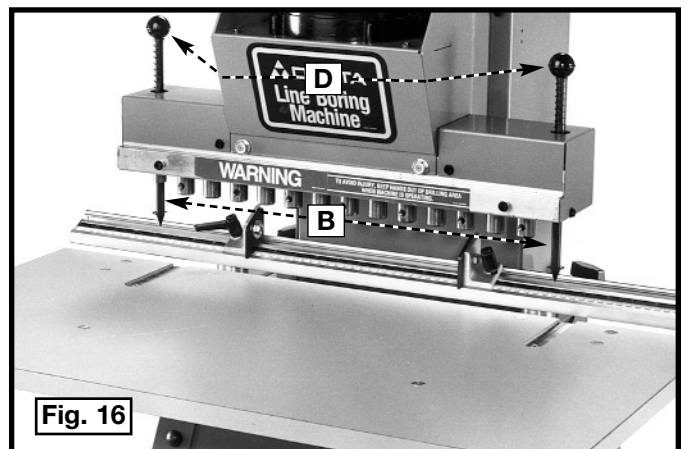
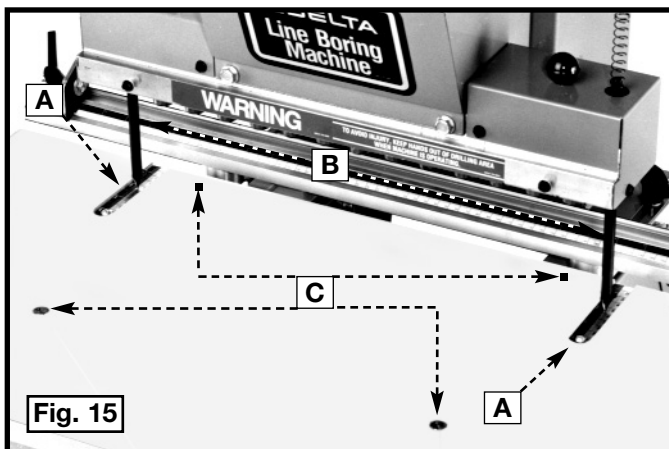
7. Refer to the following instructions "**ADJUSTING THE TABLE PARALLEL TO THE FENCE.**"

ADJUSTING THE TABLE PARALLEL TO THE FENCE

1. Remove the gauge (A) Fig. 13. The points of the index pins (B) Fig. 15 should point to the 2-1/4" mark on both scales.
2. If an adjustment is necessary, loosen the four screws (C) Fig. 15 that fasten the table to the machine frame. Adjust the table until the index pins (B) point to the 2-1/4" mark on scales (A). **IMPORTANT:** Make sure that the table mounting brackets are held securely against the machine frame and tighten four screws (C).
3. Replace the knobs (D) Fig. 16 on top of the indexing pins (B).

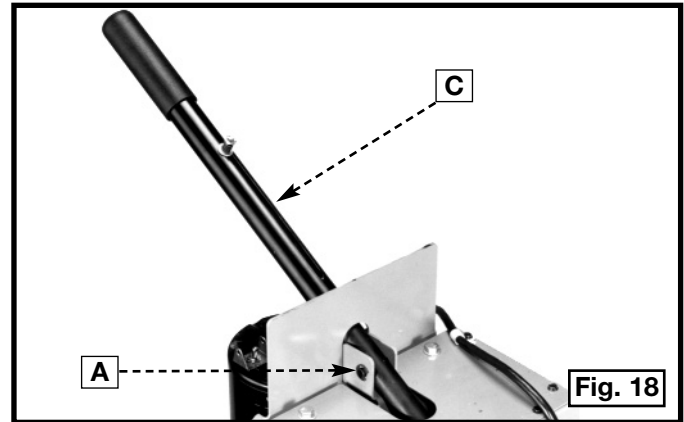
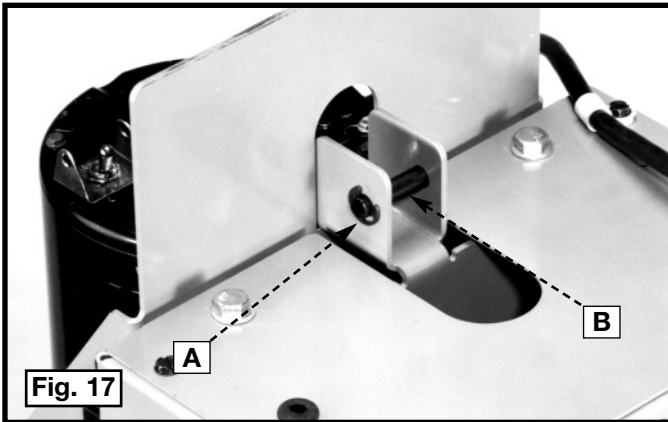
NOTE: The space between the rear of the table and the front of the fence is for chip removal.

4. Remove two clamps temporarily attached in **STEP 5** of section "**ALIGNING THE FENCE PARALLEL TO THE LINE-BORING HEAD.**"



ATTACHING THE OPERATING HANDLE

1. Remove the retaining ring (A) Fig. 17 and remove the connecting pin (B).
2. Insert the end of the operating handle (C) Fig. 18 into the head assembly and fasten the handle in place by attaching the connecting pin (removed in **STEP 1**) through the hole in the end of the handle. Replace the retaining ring (A).

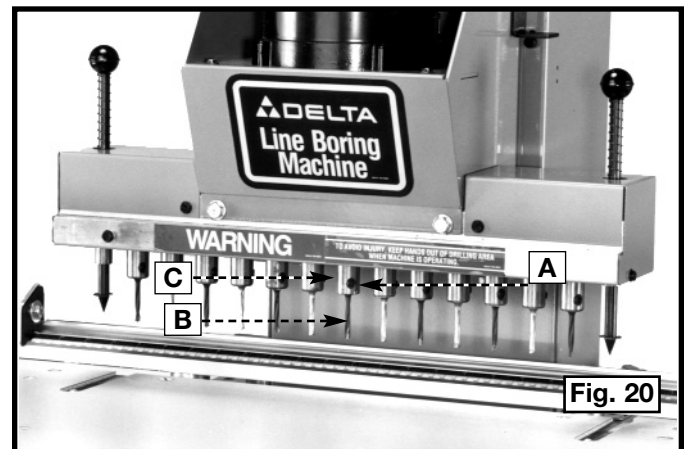
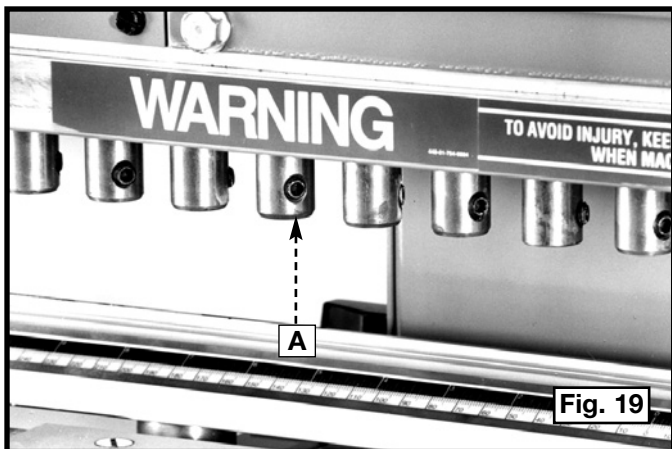


ATTACHING THE BORING BITS TO THE SPINDLES

NOTE: This machine will only accept bits with 10mm shanks.

1. Thread the thirteen supplied set screws (A) Fig. 19 part of the way into each spindle.
2. Insert the boring bits (B) Fig. 20 (not supplied with the boring machine) in the spindles (C). Push the bit (B) in as far as possible and tighten the set screws (with the supplied T-wrench against the flats on the bits).

NOTE: With the 13-Spindle Boring Machine, thirteen bits are required (seven right hand rotation and six left hand rotation). Insert a right-hand rotation bit in the center spindle, and every other spindle to the right and left. Insert the left-hand rotation bits into the remaining spindles (Fig. 20).

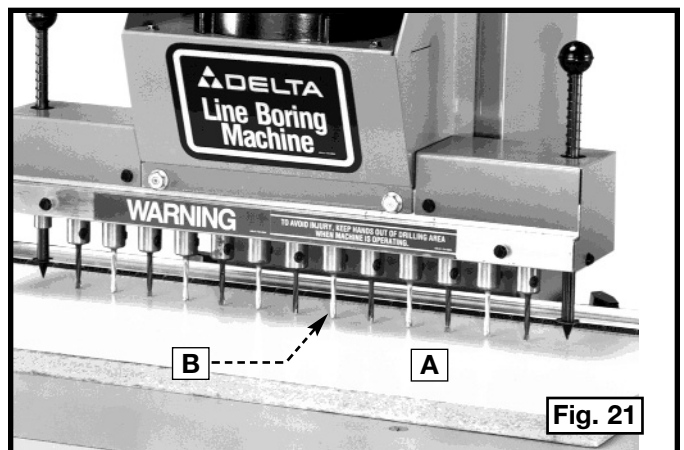


ALIGNING THE BORING BITS

1. Place a flat piece of wood (A) Fig. 21 on the table against the fence. Pull the operating handle down until **ANY ONE** boring bit (B) contacts the wood. (A).

NOTE: If all boring bits (B) contact the top surface of the wood at the same time, no alignment is necessary.

2. Hold the operating handle down with the one or more bits touching the wood.
3. Loosen the set screw of any bit not touching the wood and let the bit drop. After all bits are evenly touching the wood, tighten the set screws.



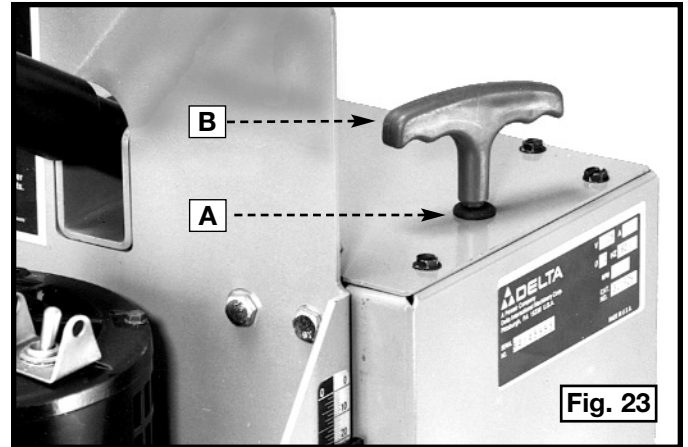
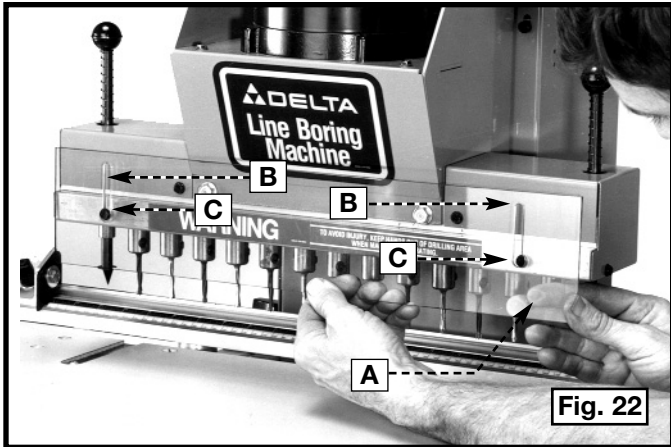
ATTACHING THE CLEAR PLASTIC GUARD

1. Remove the protective cover from the guard.
2. Engage the two slots (B) Fig. 22 on the plastic guard (A) with the two spacers and screws (C) and secure the guard by tightening the screws.

IMPORTANT: Gently bend the guard (A) outward slightly at the center when installing.

WRENCH STORAGE

A hole with a rubber grommet (A) Fig. 23 is provided on the top of the machine to store the supplied wrench (B).



OPERATION

OPERATING CONTROLS AND ADJUSTMENTS

STARTING AND STOPPING THE MACHINE

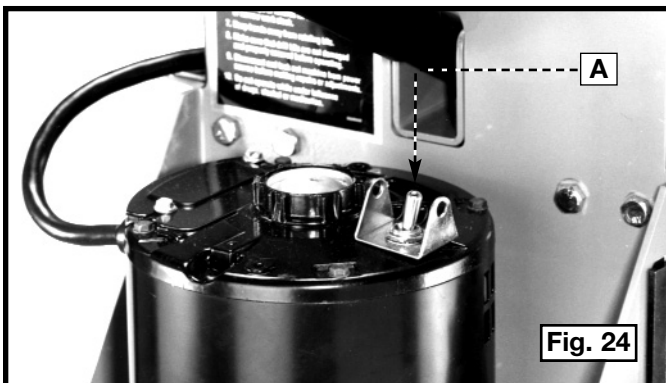
⚠ WARNING Make sure that the switch is in the “OFF” position before plugging in the power cord. In the event of a power failure, move the switch to the “OFF” position. An accidental start-up can cause injury.

The on/off switch (A) Fig. 24 is located on the top of the motor. To turn the machine “ON”, move the switch to the “ON” position.

To turn the machine “OFF”, move the switch (A) to the “OFF” position.

LOCKING THE SWITCH IN THE “OFF” POSITION

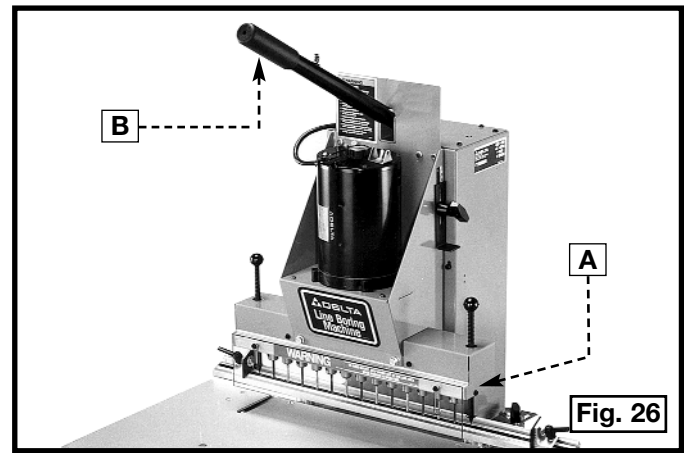
IMPORTANT: When the machine is not in use, the switch should be locked in the “OFF” position using a padlock (A) Fig. 25 with a 3/16" diameter shackle to prevent unauthorized use.



LOWERING THE BORING HEAD

⚠ WARNING DISCONNECT MACHINE FROM POWER SOURCE.

To lower the boring head (A) Fig. 26, pull down on the operating handle (B). After the holes have been bored, return the handle to the “up” position.



OPERATING HANDLE

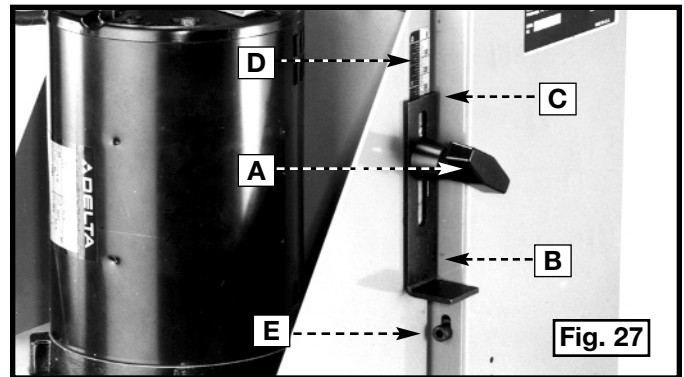
⚠ WARNING DISCONNECT MACHINE FROM POWER SOURCE.

You can pull the handle (B) Fig. 26 out to increase the leverage. Push in on the handle to move it out of the way.

CONTROLLING THE DOWNWARD TRAVEL OF THE BORING HEAD

⚠ WARNING DISCONNECT MACHINE FROM POWER SOURCE.

A stop is provided to set the depth of the boring bits. To control the downward travel of the boring head, loosen the lock knob (A) Fig. 27, and move stop bracket (B) up or down until the edge (C) of the stop bracket aligns with the desired mark on scale (D). Tighten the lock knob (A). A stop screw (E) is provided to stop the boring head when the bottom of the stop bracket (B) contacts the stop screw (E). Another stop, provided on the left side of the machine, ensures an even depth of cut. Set the right depth stop first. Then lower the boring head until it contacts the right depth stop and set the left depth stop accordingly.



ADJUSTING THE STOP SCREW

⚠ WARNING DISCONNECT MACHINE FROM POWER SOURCE.

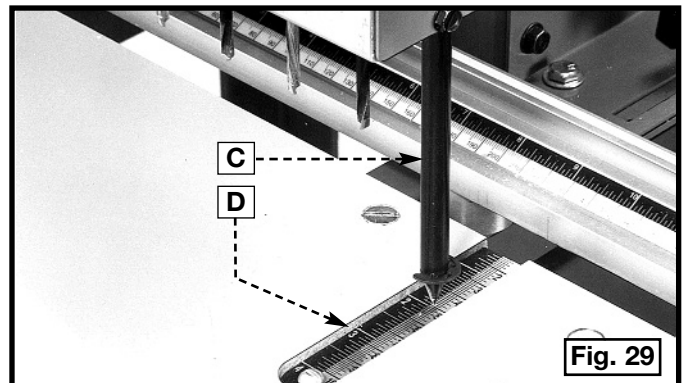
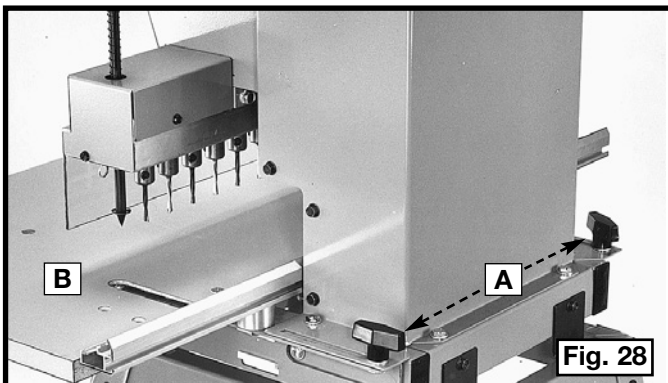
1. Set the bracket (B) Fig. 27 so that the edge (C) aligns with the “0” mark on the scale.
2. Pull down on the handle (B) Fig. 26. The stop bracket (B) Fig. 27 should contact the stop screw (E) at the same time that the bits touch the table.
3. If the bits do not touch the table, loosen the stop screw (E) Fig. 27 and adjust the stop screw up or down to just touch the stop bracket at the same time that the bits touch the table. Tighten the stop screw (E).

MOVING THE FENCE AND TABLE

⚠ WARNING DISCONNECT MACHINE FROM POWER SOURCE

You can move the fence and table in or out to bore holes up to four inches from the edge of the workpiece.

Loosen the table lock knobs (A) Fig. 28. Move the table (B) in or out until the index pin (C) Fig. 29 (when pushed down) lines up with the desired mark on the scale (D). Tighten lock knobs (A) Fig. 28.



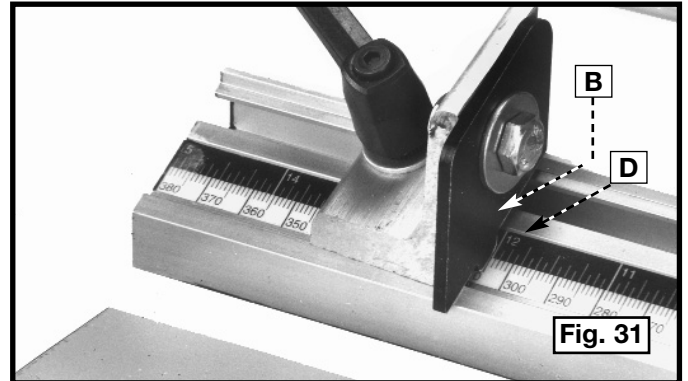
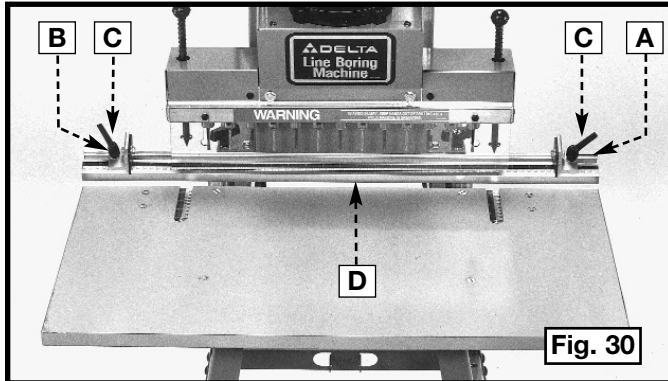
SETTING THE FENCE STOPS

⚠ WARNING DISCONNECT MACHINE FROM POWER SOURCE

Two fence stops - one right (A) Fig. 30, and one left (B) - are supplied with your boring machine. A scale (D) with a "0" mark in the center is provided on the fence. The fence extends 15" to the left and right. The stops (A) and (B) can be moved anywhere along the fence by loosening the lock handles (C), moving the stops (A) and (B), and tightening lock handles (C).

NOTE: The lock handles (C) Fig. 30 are spring-loaded. They can be repositioned by pulling out on the handle and moving the hub of the handle on the nut located underneath the hub.

The left stop is shown in Fig. 31. The stop is positioned 12 inches to the left from the center of the fence. You can read the distance on the English/Metric scale (D). If you don't use the stop (B), place the workpiece against the fence. The stop (B) automatically moves to the rear allowing the workpiece to be placed flush against the fence.



MACHINE USE

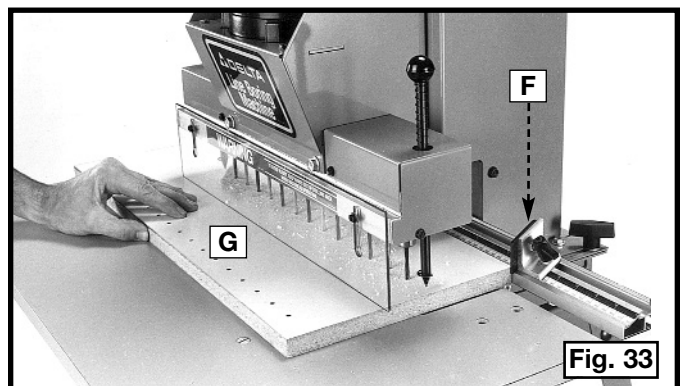
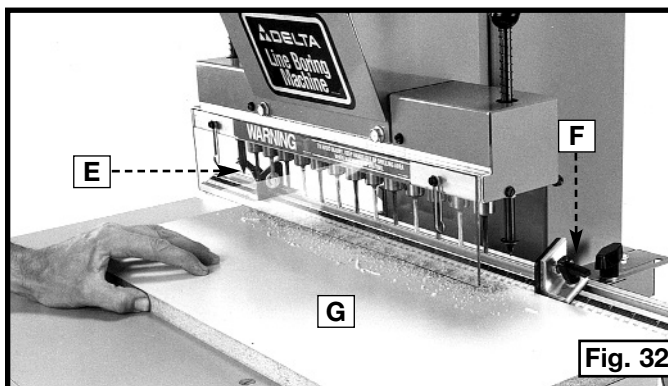
PROJECT EXAMPLE

Assignment: Bore a series of holes 1" in from the edge of the workpiece. Bore an additional series of holes, in line with the first series, 4" in from the other edge of the workpiece.

1. Set the left stop 1" to the left of the last drill bit on the left side of the machine (E) Fig. 32. Set the right stop 1" to the right of the last drill bit on the right of the machine (F) Fig. 32. Position the workpiece (G) against the fence with the left edge of the workpiece against the left stop (E). Turn the machine "on", lower the handle, and bore the holes.
2. The 13 holes are shown in Fig. 32, 1" in from the edge of the workpiece (G).

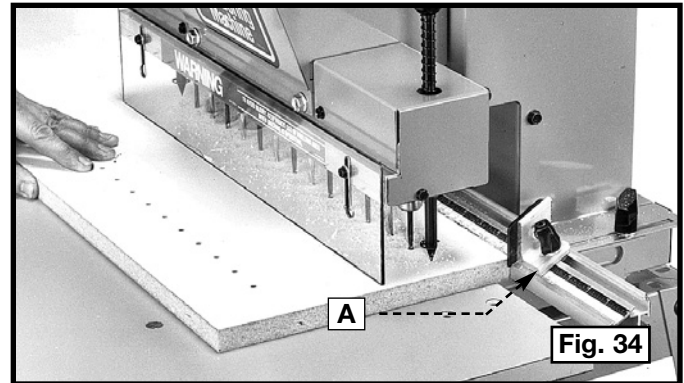
NOTE: The right stop (F) Fig. 33 has been pushed back so the workpiece can contact the fence surface.

3. Set the fence and table so that the fence is 4" away from the boring bits and turn the workpiece (G) Fig. 33 around so that the right edge of the workpiece (G) is against the right stop (F). The left stop can be pushed back so that the workpiece can contact the fence surface. Bore the additional holes (Fig. 33).

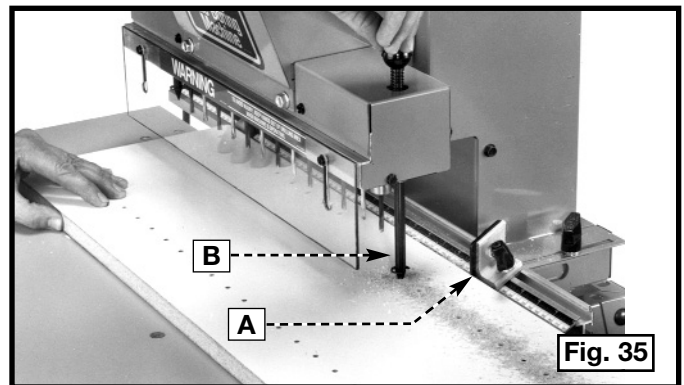


LINE BORING

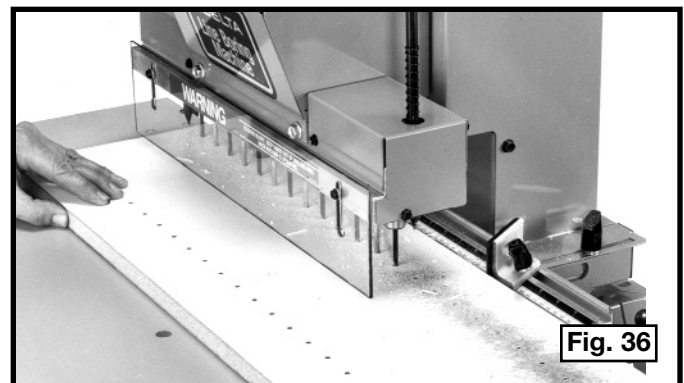
1. A typical line-boring operation is shown in Fig. 34. Note that the right end of the workpiece is positioned against the fence stop (A) and 13 holes are being bored with a 32mm center distance between each hole.



2. If more than 13 holes are required, slide the workpiece along the fence and push down on the indexing pin (B) Fig. 35 until the pointed end of the pin is in the last hole previously bored. This aligns the workpiece for the next series of holes. Note that the fence stop (A) has been pushed back allowing the workpiece to fit flush against the fence.



3. Bore the additional thirteen holes in the workpiece (Fig. 36). All holes are 32mm apart from each other.



TROUBLESHOOTING GUIDE

For assistance with your tool, visit our website at www.deltamachinery.com for a list of service centers or call the DELTA Machinery help line at 1-800-223-7278 (In Canada call 1-800-463-3582).

MAINTENANCE

KEEP MACHINE CLEAN

Periodically blow out all air passages with dry compressed air. All plastic parts should be cleaned with a soft damp cloth. NEVER use solvents to clean plastic parts. They could possibly dissolve or otherwise damage the material.

⚠ WARNING Wear ANSI Z87.1 safety glasses while using compressed air.

FAILURE TO START

Should your machine fail to start, check to make sure the prongs on the cord plug are making good contact in the outlet. Also, check for blown fuses or open circuit breakers in the line.

SERVICE



PARTS, SERVICE OR WARRANTY ASSISTANCE

All Delta Machines and accessories are manufactured to high quality standards and are serviced by a network of Porter-Cable • Delta Factory Service Centers and Delta Authorized Service Stations. To obtain additional information regarding your Delta quality product or to obtain parts, service, warranty assistance, or the location of the nearest service outlet, please call 1-800-223-7278 (In Canada call 1-800-463-3582).

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⚠ WARNING Since accessories other than those offered by Delta have not been tested with this product, use of such accessories could be hazardous. For safest operation, only Delta recommended accessories should be used with this product.

WARRANTY



Two Year Limited New Product Warranty

Delta will repair or replace, at its expense and at its option, any new Delta machine, machine part, or machine accessory which in normal use has proven to be defective in workmanship or material, provided that the customer returns the product prepaid to a Delta factory service center or authorized service station with proof of purchase of the product within two years and provides Delta with reasonable opportunity to verify the alleged defect by inspection. For all refurbished Delta product, the warranty period is 180 days. Delta may require that electric motors be returned prepaid to a motor manufacturer's authorized station for inspection and repair or replacement. Delta will not be responsible for any asserted defect which has resulted from normal wear, misuse, abuse or repair or alteration made or specifically authorized by anyone other than an authorized Delta service facility or representative. Under no circumstances will Delta be liable for incidental or consequential damages resulting from defective products. This warranty is Delta's sole warranty and sets forth the customer's exclusive remedy, with respect to defective products; all other warranties, express or implied, whether of merchantability, fitness for purpose, or otherwise, are expressly disclaimed by Delta.

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